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1. A communication system comprising:
at least two functional blocks, wherein an initiator [first] functional block
of the at least two functional blocks sends transfer requests to [communicates
with] a target [second] functional block of the at least two functional blocks, said
target functional block responding to the transfer requests, by establishing a
connection, wherein a connection is a logical state in which data may pass
between the first functional block and the second functional block; [and]
a [bus] communication medium, coupled to each of the functional blocks
and] configured to carry a plurality of signals, wherein the plurality of signals
comprises a connection identifier that [indicates] identifies a particular
connection that a data transfer is part of.];
an initiator interface module coupled to the initiator functional block and
to the communication medium to transfer data between the initiator functional
block and the communication medium;
a target interface module coupled to the target functional block and to the
communication medium to transfer data between the target functional block and
the communication medium;
the connection identifier sent with a transfer request from the initiator
interface module to the target interface module and sent with data transfers
between the target interface module and the initiator interface module.

2. The communication of claim 1, further comprising at least one bus,
each bus coupling an interface module to its associated functional block, the bus
comprising a plurality of signal lines, wherein the plurality of signal lines
[wherein the plurality of signals further] comprises a thread identifier (ID) that
indicates a transaction stream that the data transfer is part of.

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A2 3 (amended) The communication system of claim [3] 1, wherein the
thread identifier is sent from the target interface module to the target functional
block and from the initiator interface module to the initiator functional block.

Sub B27 7. (amended) A communication system comprising:
at least two functional blocks, wherein a first functional block
communicates with a second functional block by establishing a connection,
wherein a connection is a logical state in which data may pass between the first
functional block and the second functional block; and
a communication medium configured to carry a plurality of signals
between interface modules;
an initiator functional block configured to send transfer requests;
an initiator interface module coupled to the initiator functional block and
to the communication medium;
a target functional block that responds to transfer requests;
a target interface module coupled to the target functional block and to the
communication medium;
a connection identifier configured to be sent with a transfer request from
the initiator interface module to the target interface module, the connection
identifier a multi-bit value that encodes information including a transfer priority,
a transfer order, and a functional block that originated the transfer, [The
communication system of claim 6, wherein] the connection identifier is one of a
plurality of connection identifiers associated with [an] the initiator functional
block[, and wherein the connection identifier is mapped to a thread identifier by
the initiator interface module].

1 ⁸~~9~~ (amended) A communication system comprising:
2 at least two functional blocks, wherein a first functional block
3 communicates with a second functional block by establishing a connection,
4 wherein a connection is a logical state in which data may pass between the first
5 functional block and the second functional block; and
6 a communication medium coupled to interface modules and configured to
7 carry a first plurality of signals between modules;
8 at least one bus, each bus coupling an interface module to its associated
9 functional block, the bus comprising a plurality of signal lines, wherein the
10 plurality of signal lines comprises a thread identifier (ID) that indicates a
11 transaction stream that the data transfer is part of, [The communication system of
12 claim 2, wherein the plurality of signals further comprises:] a request thread ID
13 signal that indicates a thread number associated with a current transaction
14 intended for a target functional block, [;] a response thread ID signal that indicates
15 a thread that a transfer from the target functional block is part of, [;] a request
16 thread busy signal [that indicates] that indicates to an initiator functional block
17 that the target functional block cannot receive new requests associated with
18 certain threads, [;] and a response thread busy signal that indicates that the
19 initiator functional block cannot receive any new responses from the target
20 functional block that are associated with certain threads.

1 ¹⁰~~11~~ The method of claim [11] ⁹~~14~~ further comprising the step of
2 allowing the initiator functional block to issue the transfer "Y" if every non-
3 retired transfer with the same connection identifier is older than the transfer "Y"
4 and is currently issued to a same target functional block as the transfer "Y".

A⁵ 1 ~~11~~ 12. The method of claim [11] ~~14~~ ⁹, wherein if the transfer "Y" is issued,
2 the transfer "Y" is considered pipelined with the older, non-retired transfers.

1 ~~9~~ 14. (amended) [The method of claim 13,] A method for communicating
2 between a plurality of functional blocks in a computer system, the method
3 comprising the steps of:

4 establishing a plurality of connection identifiers, wherein each connection
5 identifier associates a particular data transfer with a particular connection,
6 wherein a connection is a logical state in which data may pass between an
7 initiator functional block of a plurality of functional blocks and a target
8 functional block of the plurality of functional blocks, and wherein a connection is
9 established when a particular data transfer is initiated;

A⁶ 10 allowing an initiator functional block to issue a first transfer "Y" if the
11 transfer "Y" is an oldest, non-issued, non-retired transfer among a set of transfer
12 requests with a same connection identifier as the transfer "Y"; and

13 the target functional block giving a BUSY response to every later transfer
14 that is pipelined with a transfer "X" and has a same connection identifier as the
15 transfer "X" if the target functional block gives a busy response to the transfer "X"
16 so that an initiator initiating the transfer "X" may not retire the transfer "X";

17 wherein a transfer "Y" that is issued after a transfer "X"[,] is older than the
18 transfer "X", and has a same connection identifier as the transfer "X" is considered
19 not pipelined with the transaction "X".

[Please add the following claim:

1 ⁶~~29~~. (new) The communication system as set forth in claim ⁴~~7~~, wherein
2 the thread identifier is configured to be sent from the target interface module to
3 the target functional block and from the initiator interface module to the initiator
4 functional block, and the connection identifier is configured to be sent from the
5 target interface module to the target functional block and from the initiator
6 interface module to the initiator functional block.

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1 ⁷~~30~~. The method as set forth in claim ⁴~~7~~, further comprising a thread
2 identifier configured to be communicated across the communication medium,
3 the thread identifier indicating that a transaction stream that the data transfer is
4 part of;
5 wherein the connection identifier is mapped from a thread identifier by
6 the initiator interface module.

REMARKS

In the office action dated March 21, 2000, claims 1-28 are pending. The abstract is objected to. Claim 1 is objected to. Claims 10-28 are rejected under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1-6 and 10-13 are rejected under 35 USC 103(a) as being unpatentable over Barth et al., in view of Timbs. Claims 7-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 3, 5, 6, 10, and 13 have been cancelled, without prejudice, claims 29-30 have been added and claims 1, 4, 7, 9, 11, 12, 14 have been amended. The